

530,600
10/530600

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 April 2004 (15.04.2004)

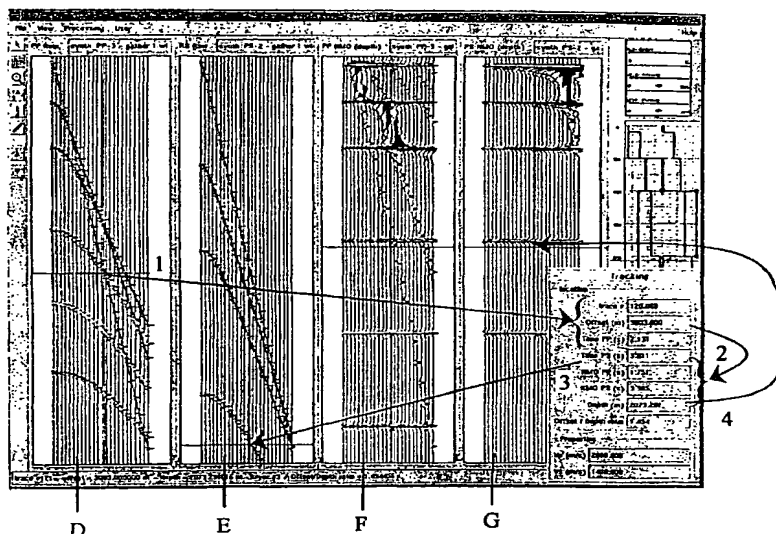
PCT

(10) International Publication Number
WO 2004/031805 A1

- (51) International Patent Classification⁷: G01V 1/28
- (21) International Application Number: PCT/GB2003/004364
- (22) International Filing Date: 7 October 2003 (07.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/416,507 7 October 2002 (07.10.2002) US
0308781.4 16 April 2003 (16.04.2003) GB
- (71) Applicant (for all designated States except CA, FR, US):
WESTERNGECO SEISMIC HOLDINGS LIMITED
[—/—]; P.O. Box 71, Craigmuir Chambers, Road Town,
Tortola (VG).
- (71) Applicant (for FR only): SERVICES PETROLIERS
SCHLUMBERGER [FR/FR]; 42, rue Saint Dominique,
F-75007 Paris (FR).
- (71) Applicant (for CA only): WESTERNGECO CANADA
LIMITED [CA/CA]; 24th Floor, Monenco Place, 801 6th
Avenue SW, Calgary, Alberta TP2 3W2 (CA).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): AARRE, Victor
[NO/NO]; R. Steens Gate 33, N-4010 Stavanger (NO).
LAURENT, Christophe [FR/GB]; 25 Riverside, Horley,
Surrey RH6 7LN (GB).
- (74) Agents: MARKS & CLERK et al.; 4220 Nash Court, Ox-
ford Business Park South, Oxford, Oxfordshire OX4 2RU
(GB).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE,
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

[Continued on next page]

(54) Title: PROCESSING SEISMIC DATA



(57) Abstract: A method of processing seismic data comprises identifying the value of a first parameter associated with an event in a first set of seismic data. The value of a second parameter associated with a corresponding event in a second set of seismic data is then obtained using at least one look-up table. The first parameter may be, for example, PP travel time with the first data set being a raw PP data set, and the second parameter may be, for example, PS travel time with the second data set being a raw PS data set or reflection depth. The invention makes it possible to identify pairs of corresponding PP and PS events in raw data traces. The look-up table(s) are obtained using an assumed model for the velocity of propagation of acoustic energy within the earth. The results of the method may be used in quality control, or may be used to correct the velocity model.

BEST AVAILABLE COPY

WO 2004/031805 A1